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The Handy Book

Containing tables, rules and other information regarding the working of the precious metals

HANDY & HARMAN
Bridgeport, Conn.
New York City

Handy & Harman

SMELTERS AND
REFINERS OF

Gold, Silver and Platinum

MANUFACTURERS OF

Fine Gold and Silver Bars
Rolled Gold Granulated Silver
Rolled Sterling Silver
.999+ Fine Silver Anodes
"Special Refined" Granulated Silver

Plant BRIDGEPORT, CONN.
NEW YORK OFFICE 59 Cedar Street

Preface

THE "Handy Book" is published by the Service Department of Handy & Harman, a department which was organized primarily to increase the efficiency of their own business, which is the Smelting, Refining and the Melting, Alloying and Rolling of the precious metals.

This department embraces a thoroughly up-to-date laboratory, conducted by expert metallurgists and Metallurgical Engineers of recognized standing.

We offer the services of this department to assist the manufacturer in dealing with the problems arising in his business, and we solicit your correspondence.

The object of this book is to provide the progressive Manufacturing Jeweler with information that will be of value to him in the manufacture of his product.

We believe that the tables and rules will give the Jeweler definite and concrete information regarding the handling of the precious metals which has never been published before.

We acknowledge our indebtedness to the assistance and co-operation of E. H. Ackley of Eckfeldt & Ackley, Newark, N. J., G. H. Dufour, (Jewelry Dept.), Marshall Field & Co., Chicago, Ill., J. H. Bennett, J. R. Wood & Sons, Newark, N. J., and Newman D. Waffle, M. A., East Orange, N. J.

H. W. BOYNTON
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Editors.

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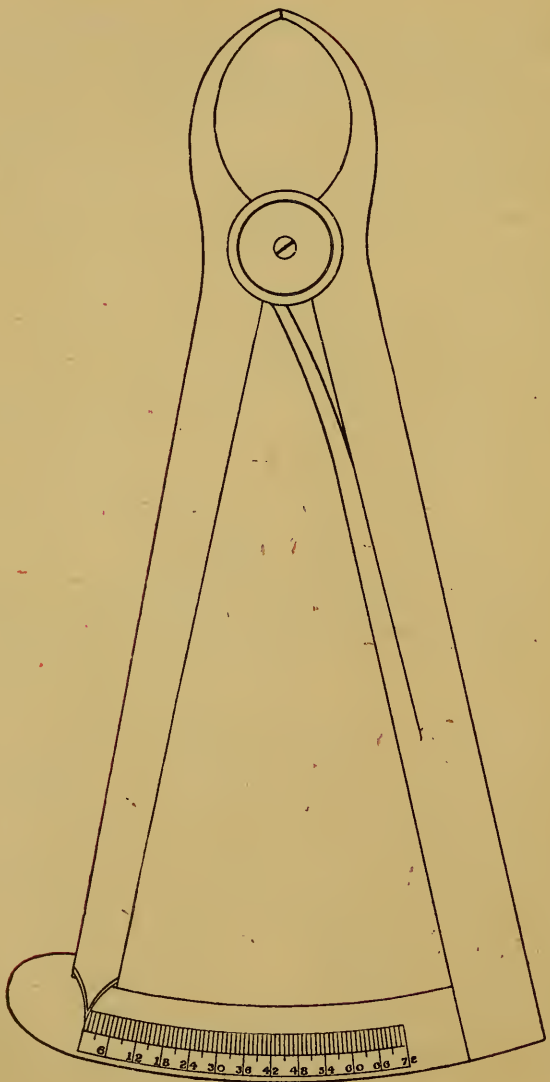


Gauges

Equivalent of each point on Douzième Gauge

DOUZIÈMES	Equivalent in Thousandths of an inch	DOUZIÈMES	Equivalent in Thousandths of an inch
1	.00740	37	.27386
2	.01480	38	.28126
3	.02220	39	.28866
4	.02961	40	.29606
5	.03701	41	.30346
6	.04441	42	.31087
7	.05181	43	.31827
8	.05921	44	.32567
9	.06661	45	.33307
10	.07402	46	.34047
11	.08142	47	.34787
1 Ligne=12	.08882	4 Lignes=48	.35527
13	.09622	49	.36268
14	.10362	50	.37008
15	.11102	51	.37748
16	.11842	52	.38488
17	.12583	53	.39228
18	.13323	54	.39968
19	.14063	55	.40709
20	.14803	56	.41449
21	.15543	57	.42189
22	.16283	58	.42929
23	.17024	59	.43669
2 Lignes=24	.17764	5 Lignes=60	.44409
25	.18504	61	.45150
26	.19244	62	.45890
27	.19984	63	.46630
28	.20724	64	.47370
29	.21465	65	.48110
30	.22205	66	.48850
31	.22945	67	.49590
32	.23685	68	.50331
33	.24425	69	.51071
34	.25165	70	.51811
35	.25905	71	.52551
3 Lignes=36	.26646	6 Lignes=72	.53291

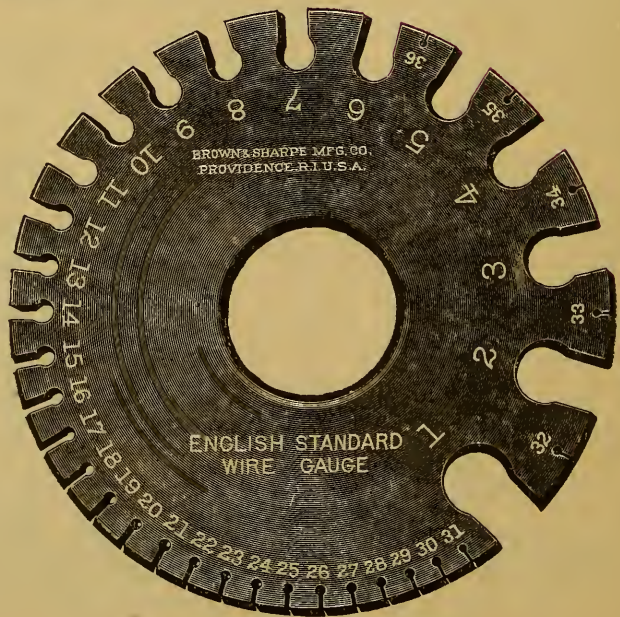
1 Ligne=2.256 Millimeters

Gauges

Brown
&
Sharpe

American
Standard

Stubbs
or
English
Standard



Try Us On a Lot of Your Sweeps

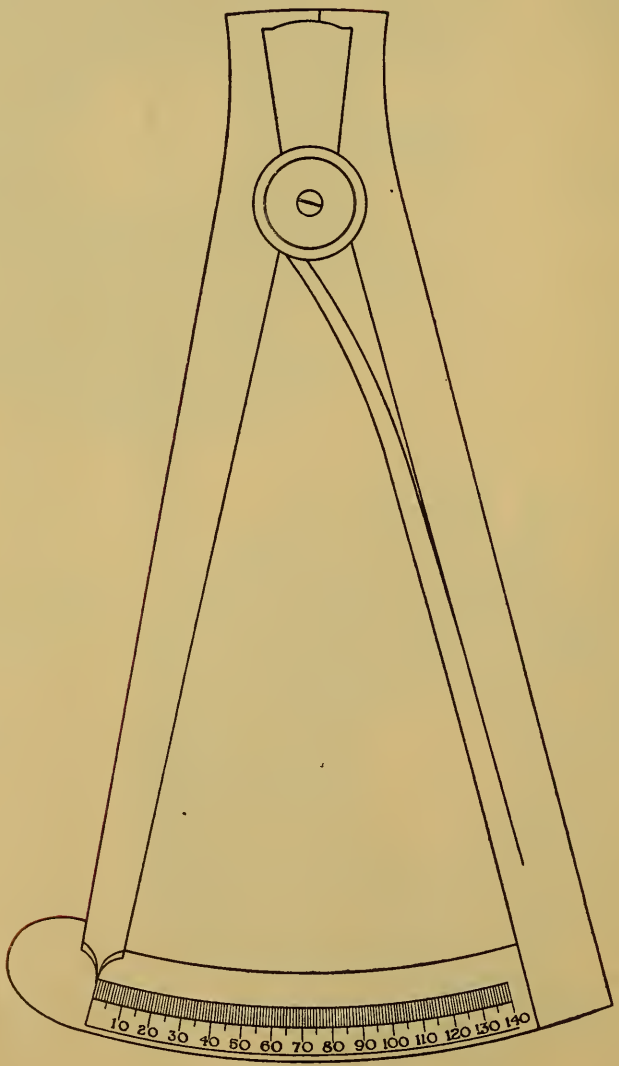
Gauges

and their Equivalents in Thousandths of an Inch

American Standard Gauge	Equivalents in thousandths of an inch	American Standard Gauge	Equivalents in thousandths of an inch
1	.28930	21	.02846
2	.25763	22	.02534
3	.22942	23	.02257
4	.20431	24	.02010
5	.18194	25	.01790
6	.16202	26	.01594
7	.14428	27	.01419
8	.12849	28	.01264
9	.11443	29	.01125
10	.10189	30	.01002
11	.09074	31	.00892
12	.08080	32	.00795
13	.07196	33	.00708
14	.06408	34	.00630
15	.05706	35	.00561
16	.05082	36	.00500
17	.04525	37	.00445
18	.04030	38	.00396
19	.03589	39	.00353
20	.03196	40	.00314

Stubbs Gauge	Equivalents in thousandths of an inch	Stubbs Gauge	Equivalents in thousandths of an inch
1	.300	19	.042
2	.284	20	.035
3	.259	21	.032
4	.238	22	.028
5	.220	23	.025
6	.203	24	.022
7	.180	25	.020
8	.165	26	.018
9	.148	27	.016
10	.134	28	.014
11	.120	29	.013
12	.109	30	.012
13	.095	31	.010
14	.083	32	.009
15	.072	33	.008
16	.065	34	.007
17	.058	35	.005
18	.049	36	.004

Millimeter Caliper

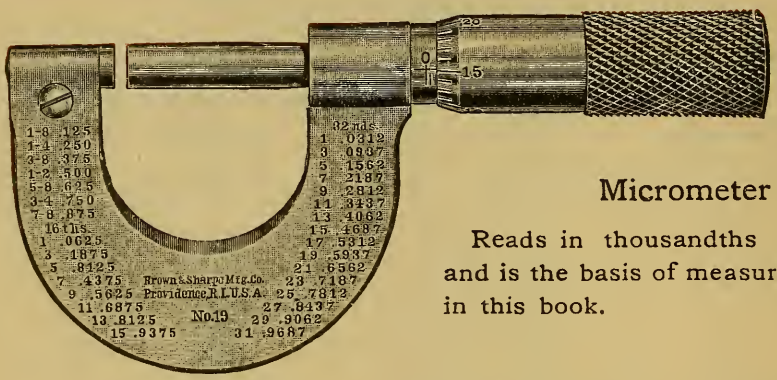


Gauges

Equivalent of each point on Millimeter Gauge

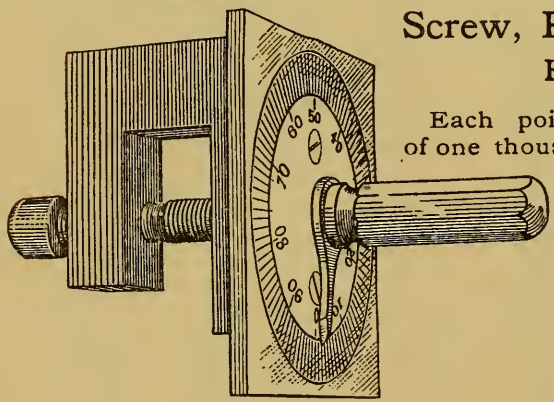
Tenths of Millimeter	Thousandths of an inch	Tenths of Millimeter	Thousandths of an inch	Tenths of Millimeter	Thousandths of an inch
1	.003937	47	.185039	94	.370078
2	.007874	48	.188976	95	.374015
3	.011811	49	.192913	96	.377952
4	.015748	50	.196850	97	.381889
5	.019685	51	.200787	98	.385826
6	.023622	52	.204724	99	.389763
7	.027559	53	.208661	100	.393700
8	.031496	54	.212598	101	.397637
9	.035433	55	.216535	102	.401574
10	.039370	56	.220472	103	.405511
11	.043307	57	.224409	104	.409448
12	.047244	58	.228346	105	.413385
13	.051181	59	.232283	106	.417322
14	.055118	60	.236220	107	.421259
15	.059055	61	.240157	108	.425196
16	.062992	62	.244094	109	.429133
17	.066929	63	.248031	110	.433070
18	.070866	64	.251968	111	.437007
19	.074803	65	.255905	112	.440944
20	.078740	66	.259842	113	.444881
21	.082677	67	.263779	114	.448818
22	.086614	68	.267716	115	.452755
23	.090551	69	.271653	116	.456692
24	.094488	70	.275590	117	.460629
25	.098425	71	.279527	118	.464566
26	.102362	72	.283464	119	.468503
27	.106299	73	.287401	120	.472440
28	.110236	74	.291338	121	.476377
29	.114173	75	.295275	122	.480314
30	.118110	76	.299212	123	.484251
31	.122047	77	.303149	124	.488188
32	.125984	78	.307086	125	.492125
33	.129921	79	.311023	126	.496062
34	.133858	80	.314960	127	.499999
35	.137795	81	.318897	128	.503936
36	.141732	82	.322834	129	.507873
37	.145669	83	.326771	130	.511810
38	.149606	84	.330708	131	.515747
39	.153543	85	.334645	132	.519684
40	.157480	86	.338582	133	.523621
41	.161417	87	.342519	134	.527558
42	.165354	88	.346456	135	.531495
43	.169291	89	.350393	136	.535432
44	.173228	90	.354330	137	.539369
45	.177165	91	.358267	138	.543306
46	.181102	92	.362204	139	.547243
		93	.366141	140	.551180

Gauges



Micrometer

Reads in thousandths of an inch and is the basis of measurement used in this book.



Screw, Point or Dial Gauge

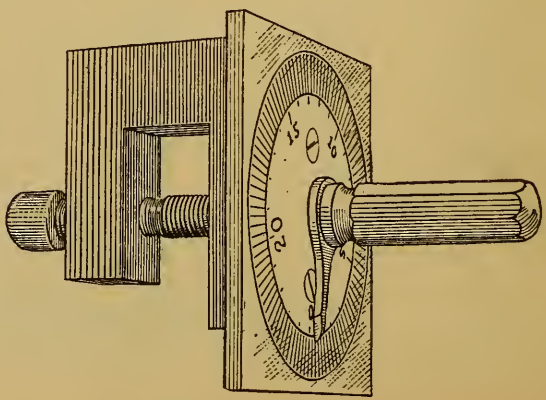
Reads in Points

Each point being equivalent to ¼ of one thousandth of an inch.

EXAMPLE:—

80 points on this Gauge are equal to 20 thousandths of an inch.

Same as Gauge shown above except that dial reads directly in thousandths of an inch, there being 4 lines on the dial to each thousandth of an inch. A complete revolution of the pointer measures 25 thousandths of an inch.



Gauges

Decimal Equivalents of Common Fractions

Eighths and Quarters of an inch	
1/8	.125
1/4	.250
3/8	.375
1/2	.500
5/8	.625
3/4	.750
7/8	.875

Sixteenths of an inch	
1	.0625
3	.1875
5	.3125
7	.4375
9	.5625
11	.6875
13	.8125
15	.9375

Thirty-seconds of an inch	
1	.03125
3	.09375
5	.15625
7	.21875
9	.28125
11	.34375
13	.40625
15	.46875
17	.53125
19	.59375
21	.65625
23	.71875
25	.78125
27	.84375
29	.90625
31	.96875

Sixty-fourths of an inch	
1	.015625
3	.046875
5	.078125
7	.109375
9	.140625
11	.171875
13	.203125
15	.234375
17	.265625
19	.296875
21	.328125
23	.359375
25	.390625
27	.421875
29	.453125
31	.484375
33	.515625
35	.546875
37	.578125
39	.609375
41	.640625
43	.671875
45	.703125
47	.734375
49	.765625
51	.796875
53	.828125
55	.859375
57	.890625
59	.921875
61	.953125
63	.984375

Weights

A New System of Weighing

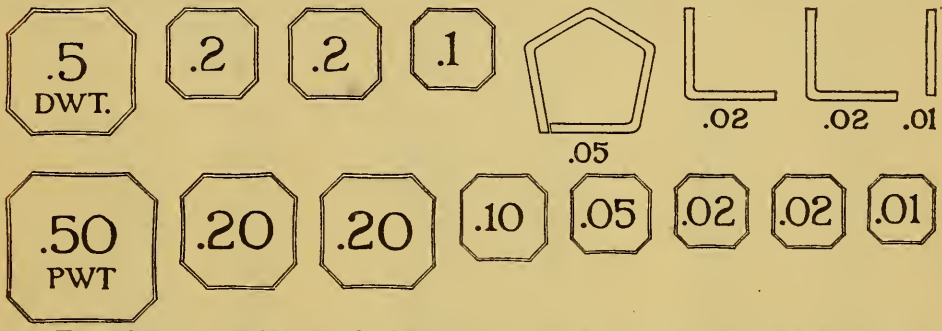
WE offer a suggestion to the Manufacturing Jeweler in the form of a "New System" for weighing metal. In our method the Pennyweight is the unit as heretofore but the Grain is discontinued in favor of a decimal system, the Pennyweight being divided into one hundred parts instead of twenty-four as before. The new weights read "Pennyweights" and "Hundredths of a Pennyweight."

There are several good reasons why the "New System" has advantages over the old. First of all is simplicity, for you will readily admit that it is easier to figure decimal parts than awkward fractions such as you now encounter in billing or in making up a melt. Second, the "New System" lessens the possibility of error; certainly a factor when you are dependent upon others. Third, it enables you to weigh closer, a point not to be overlooked if you handle Platinum, etc.

The "New" weights are being made for us by H. Kohlbush, Sr., Voland & Co., H. Troemner & Co., and C. Becker. They are illustrated on the opposite page, and the cost per set ranges from 85 cents to $1.85 according to the manufacturer. We can supply these weights or they may be obtained directly from the manufacturers.

Weights (New System)

All the weights given in this book are figured according to the "New System," illustrated below. Two different manufacturers' weights are shown.



For the convenience of the manufacturer using the Reference and Weight Tables given, who prefers to continue the use of the "Old Method," we give below an Equivalent Table.

Decimal Equivalents of Grains and Half Grains

	Dwt.		Dwt.
½ Grain	.0208	12½ Grains	.5208
1 Grain	.0417	13 Grains	.5417
1½ Grains	.0625	13½ Grains	.5625
2 Grains	.0833	14 Grains	.5833
2½ Grains	.1042	14½ Grains	.6042
3 Grains	.1250	15 Grains	.6250
3½ Grains	.1458	15½ Grains	.6458
4 Grains	.1667	16 Grains	.6667
4½ Grains	.1875	16½ Grains	.6875
5 Grains	.2083	17 Grains	.7083
5½ Grains	.2292	17½ Grains	.7292
6 Grains	.2500	18 Grains	.7500
6½ Grains	.2708	18½ Grains	.7708
7 Grains	.2917	19 Grains	.7917
7½ Grains	.3125	19½ Grains	.8125
8 Grains	.3333	20 Grains	.8333
8½ Grains	.3542	20½ Grains	.8542
9 Grains	.3750	21 Grains	.8750
9½ Grains	.3958	21½ Grains	.8958
10 Grains	.4167	22 Grains	.9167
10½ Grains	.4375	22½ Grains	.9375
11 Grains	.4583	23 Grains	.9583
11½ Grains	.4792	23½ Grains	.9792
12 Grains	.5000	24 Grains	1.0000

Weights

Avoirdupois Ounces and Pounds to Ounces Troy

Avoir. Ozs.	Troy Ozs.
1	.9115
2	1.823
3	2.734
4	3.646
5	4.557
6	5.469
7	6.380
8	7.292
9	8.203
10	9.115
11	10.026
12	10.937
13	11.849
14	12.760
15	13.672

Avoir. Lbs.	
1	14.583
2	29.167
3	43.750
4	58.333
5	72.917
6	87.500
7	102.083
8	116.667
9	131.250
10	145.833
11	160.417
12	175.000
13	189.583
14	204.167
15	218.750
16	233.333
17	247.917
18	262.500
19	277.083
20	291.667
21	306.250
22	320.833

Avoir. Lbs.	Troy Ozs.
23	335.417
24	350.000
25	364.583
26	379.167
27	393.750
28	408.333
29	422.917
30	437.500
31	452.083
32	466.667
33	481.250
34	495.833
35	510.417
36	525.000
37	539.583
38	554.167
39	568.750
40	583.333
41	597.917
42	612.500
43	627.083
44	641.667
45	656.250
46	670.833
47	685.417
48	700.000
49	714.583
50	729.167
51	743.750
52	758.333
53	772.917
54	787.500
55	802.083
56	816.667
57	831.250
58	845.833
59	860.417
60	875.000
61	889.583

Avoir. Lbs.	Troy Ozs.
62	904.167
63	918.750
64	933.333
65	947.917
66	962.500
67	977.083
68	991.667
69	1006.250
70	1020.833
71	1035.417
72	1050.000
73	1064.583
74	1079.167
75	1093.750
76	1108.333
77	1122.917
78	1137.500
79	1152.083
80	1166.667
81	1181.250
82	1195.833
83	1210.417
84	1225.000
85	1239.583
86	1254.167
87	1268.750
88	1283.333
89	1297.917
90	1312.500
91	1327.083
92	1341.667
93	1356.250
94	1370.833
95	1385.417
96	1400.000
97	1414.583
98	1429.167
99	1443.750
100	1458.333

Weights

Ounces Troy to Pounds and Ounces Avoirdupois

Ozs. Troy	Lbs. and Ozs. Avoir.	Ozs. Troy	Lbs. and Ozs. Avoir.	Ozs. Troy	Lbs. and Ozs. Avoir.
1	1.1	37	2– 8.6	74	5– 1.2
2	2.2	38	2– 9.7	75	5– 2.3
3	3.3	39	2–10.8	76	5– 3.4
4	4.4	40	2–11.9	77	5– 4.5
5	5.5	41	2–13.0	78	5– 5.6
6	6.6	42	2–14.1	79	5– 6.7
7	7.7	43	2–15.2	80	5– 7.8
8	8.8	44	3– 0.3	81	5– 8.9
9	9.9	45	3– 1.4	82	5–10.0
10	11.0	46	3– 2.5	83	5–11.1
11	12.1	47	3– 3.6	84	5–12.2
12	13.2	48	3– 4.7	85	5–13.3
13	14.3	49	3– 5.8	86	5–14.4
14	15.4	50	3– 6.9	87	5–15.5
15	1– 0.5	51	3– 8.0	88	6– 0.6
16	1– 1.6	52	3– 9.1	89	6– 1.7
17	1– 2.7	53	3–10.2	90	6– 2.8
18	1– 3.8	54	3–11.3	91	6– 3.9
19	1– 4.9	55	3–12.4	92	6– 5.0
20	1– 6.0	56	3–13.5	93	6– 6.1
21	1– 7.1	57	3–14.6	94	6– 7.2
22	1– 8.2	58	3–15.7	95	6– 8.3
23	1– 9.3	59	4– 0.8	96	6– 9.4
24	1–10.4	60	4– 1.9	97	6–10.5
25	1–11.5	61	4– 3.0	98	6–11.6
26	1–12.6	62	4– 4.1	99	6–12.7
27	1–13.7	63	4– 5.2	100	6–13.8
28	1–14.8	64	4– 6.3	200	13–11.5
29	1–15.9	65	4– 7.4	300	20– 9.2
30	2– 1.0	66	4– 8.5	400	27– 6.9
31	2– 2.1	67	4– 9.6	500	34– 4.6
32	2– 3.2	68	4–10.7	600	41– 2.3
33	2– 4.3	69	4–11.8	700	48– 0.0
34	2– 5.4	70	4–12.8	800	54–13.8
35	2– 6.4	71	4–13.9	900	61–11.5
36	2– 7.5	72	4–15.0	1000	68– 9.2
		73	5– 0.1		

Reducing Table

To Alloy Gold from any Karat to any Lower Karat

From	To 8 K.	To 10 K.	To 12 K.	To 14 K.	To 16 K.	To 18 K.	To 20 K.	To 22 K.
	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.
24 K	2.000	1.400	1.000	.714	.500	.333	.200	.091
23 K	1.875	1.300	.917	.643	.438	.278	.150	.045
22 K	1.750	1.200	.833	.571	.375	.222	.100	
*21.6 K	1.700	1.160	.800	.543	.350	.200	.080	
21 K	1.625	1.100	.750	.500	.313	.167	.050	
20 K	1.500	1.000	.667	.429	.250	.111		
19 K	1.375	.900	.583	.357	.188	.056		
18 K	1.250	.800	.500	.286	.125			
17 K	1.125	.700	.417	.214	.063			
16 K	1.000	.600	.333	.143				
15 K	.875	.500	.250	.071				
14 K	.750	.400	.167					
13 K	.625	.300	.083					
12 K	.500	.200						
11 K	.375	.100						
10 K	.250							
9 K	.125							

*American Gold Coin

EXPLANATION OF TABLE

To alloy from any karat to any lower karat locate karat of metal on hand in left hand column of table; then read across until you reach the column headed by the karat you wish to secure. That figure will represent the number and fraction of dwts. of alloy that you must add to each dwt. of the original gold.

GENERAL FORMULA FOR REDUCING THE FINENESS OF GOLD

Multiply the weight by the difference between the fineness on hand and the fineness required, and divide by the latter. The result will be the weight of alloy to be added.

Example

Reduce 100 dwt. of 14 K. stock to 10 K.

The difference between the finenesses is 4. By the rule we have

$$\frac{100 \times 4}{10} = 40 \text{ dwt. of alloy to be added.}$$

Raising Table

To Raise Gold from any Karat to any Higher Karat

From	To 22 K.	To 20 K.	To 18 K.	To 16 K.	To 14 K.	To 12 K.	To 10 K.	To 8 K.
	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.
6 K	8.000	3.500	2.000	1.250	.800	.500	.286	.125
7 K	7.500	3.250	1.833	1.125	.700	.417	.214	.063
8 K	7.000	3.000	1.667	1.000	.600	.333	.143	
9 K	6.500	2.750	1.500	.875	.500	.250	.071	
10 K	6.000	2.500	1.333	.750	.400	.167		
11 K	5.500	2.250	1.167	.625	.300	.083		
12 K	5.000	2.000	1.000	.500	.200			
13 K	4.500	1.750	.833	.375	.100			
14 K	4.000	1.500	.667	.250				
15 K	3.500	1.250	.500	.125				
16 K	3.000	1.000	.333					
17 K	2.500	.750	.167					
18 K	2.000	.500						
19 K	1.500	.250						
20 K	1.000							
21 K	.500							
*21.60 K	.200							

*American Gold Coin

EXPLANATION OF TABLE.

To raise from any karat to any higher karat, locate karat of metal on hand in left hand column of table, then read across until you reach the column headed by the karat you wish to secure. That figure will represent the number and fraction of dwts. of fine gold that you must add to each dwt. of the original gold.

GENERAL FORMULA FOR INCREASING THE FINENESS OF GOLD

Multiply the weight by the difference between the baseness—that is, the number of parts of alloy—of the gold on hand and the baseness of the karat required, and divide by the latter. The result will be the weight of fine gold to be added.

Example

Increase 100 dwt. of 10 K. stock to 14 K.

The difference between the basenesses is 4. By the rule we have $\frac{100 \times 4}{10}$ = 40 dwt. of fine gold to be added.

Gold Coins

Reducing Table for U. S. Money

To reduce a U. S. gold piece to any of the karats given, add alloy to the amount indicated opposite the denomination of the gold piece and under the karat wanted.

	To 8K.	To 10K.	To 12K.	To 14K.	To 16K.	To 18K	To 20K.
	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.	Dwts.
$20 Gold Piece	36.550	24.940	17.200	11.675	7.525	4.300	1.720
$10 Gold Piece	18.275	12.470	8.600	5.838	3.763	2.150	.860
$ 5 Gold Piece	9.138	6.235	4.300	2.919	1.881	1.075	.430

A $20 Gold Piece weighs 516 Grains, or 21.50 dwts.
A $10 Gold Piece weighs 258 Grains, or 10.75 dwts.
A $ 5 Gold Piece weighs 129 Grains, or 5.375 dwts.

U. S. and Canadian gold coins are .900 fine, or 21.60 karats.

Raising Table for U. S. Money

To raise a $20 Gold Piece to 22K. add 4.300 dwts. fine gold.
To raise a $10 Gold Piece to 22K. add 2.150 dwts. fine gold.
To raise a $ 5 Gold Piece to 22K. add 1.075 dwts. fine gold.

Gold coins of Great Britain are .916⅔ fine, or 22 karats.

Fineness of Gold Karats

1K.	.0417	13K.	.5417
2K.	.0833	14K.	.5833
3K.	.1250	15K.	.6250
4K.	.1667	16K.	.6667
5K.	.2083	17K.	.7083
6K.	.2500	18K.	.7500
7K.	.2917	19K.	.7917
8K.	.3333	20K.	.8333
9K.	.3750	21K.	.8750
10K.	.4167	22K.	.9167
11K.	.4583	23K.	.9583
12K.	.5000	24K.	1.0000

Specific Gravity

A WORKING knowledge of specific gravities of metal alloys is a great help to any jeweler. It enables him to figure the weight-relationship between different metals or alloys in such a way as to produce articles of equal size at a lower expense for the precious metal in them.

For example, if you are using a formula for 14K. gold that has a specific gravity of 13.00 and you have occasion to use a formula having a specific gravity of 13.52, an article made up from gold of the heavier specific gravity would be heavier than the same article made up from gold of the lighter specific gravity, provided the articles were identical in size and gauge. To find how much the difference would be, divide the heavier specific gravity by the lighter, in this case 13.52 by 13, and the result, 1.04, indicates that an article in the heavier 14K. gold would be 1.04 times as heavy as the same article in the lighter 14 karat.

It should be borne in mind that the Weight Tables in this book are based on the formulas shown on page 19, and in order to use the Comparative and Weight Tables effectively you should figure the specific gravity of your own alloys according to the method explained on page 18.

To compare the weight of your alloy with the one we show, or with any metal, divide the specific gravity of the alloy by the specific gravity of the metal or alloy with which the comparison is to be made.

For example, suppose your formula for 14K. gold is: gold 100 parts, silver 36 parts, and copper 35 parts. The specific gravity of this alloy is 13.64. To compare this with the 14K. yellow gold from which the

tables in this book are computed, the specific gravity of which is 13.26, divide 13.64 by 13.26. The result, 1.02865, shows the number of times as heavy an article of the heavier specific gravity would be than the same article of the lighter specific gravity; or, concretely, supposing a piece of gold of the lighter specific gravity to weigh 100 dwts., a piece of gold of exactly the same gauge and size made from the alloy having the heavier specific gravity would weigh 102.865 dwts. Again, supposing your formula is: gold 140 parts, silver 33 parts, copper 56.95 parts, and zinc 10.05 parts. The specific gravity of this alloy is 13.16. The process of comparison is the same in this case, although this formula would produce an alloy of a lighter specific gravity than that of the formula used in this book, which is 13.26. The only difference is that in dividing 13.16 by 13.26 the result is less than 1, or .99246, so that a piece of gold made from an alloy having a specific gravity of 13.26, and weighing 100 dwts., would weigh only 99.246 dwts. when made from alloy having a specific gravity of 13.16. While these examples make use of only 14K. gold, the process is the same for any other karat or for any metal.

It is apparent that if a certain article is made to be sold by the piece instead of by the pennyweight, it will be more advantageous for the seller to make that article from a formula having as low a specific gravity as it is possible to use without affecting the color, for while the article is made to the same size from stock the same gauge, the finished product will weigh a little less if made from gold of the same karat but of a lower specific gravity. The replacing of some of the silver by copper or zinc, or by a patent alloy, will lower the specific gravity of alloyed gold, as will the replacing of any part of the copper by zinc or a patent alloy. Patent alloys generally have a lower specific gravity than pure copper.

Specific Gravity

A Short Method of Calculating the Specific Gravity or Density of an Alloy

For the purposes of this book a short way of calculating the specific gravity of an alloy will be found of practical use. The following table, showing the volume in cubic centimeters of one gram of various substances, gives at the same time the unvarying relation between the weight of each substance and its volume, so that no matter what system of weights is used the final results will be the same.

Fine Gold	.051653	Henrich's No. 10 Alloy	.114940
Fine Silver	.094696	Henrich's No. 12 Alloy	.116690
Fine Copper	.113250	Henrich's No. 14 Alloy	.117100
Zinc	.142857	Riverside "Omega" Alloy	.118624
Tin	.137174	Wessell's Alloy	.118624
Nickel	.112359	Worthington & Raymond No. 1	.119889
Cadmium	.115340	Worthington & Raymond No. 2	.117980
Palladium	.084746	Worthington & Raymond G. or S. No. 91	.118525
Henrich's No. 1 Alloy	.116010		
Henrich's No. 3 Alloy	.115870		
Henrich's No. 5 Alloy	.114160		

Using the above table the specific gravity of any compound of these substances may be found in advance of its mixture by the following rule.

1. Multiply the weight of each metal used by the figure shown opposite the name of that metal in the table above.
2. Add the weights of the metals used.
3. Add the results of the multiplications.
4. Divide the sum of the weights by the sum of the results of the multiplications. The answer will be the specific gravity of the mixture.

For example, to find the specific gravity of 14K. yellow gold, according to the formula 583 parts gold, 104 parts silver and 313 parts copper. From the rules above we have the following:

Fine Gold	583 parts by weight $\times$ .051653	= 30.110
Fine Silver	104 parts by weight $\times$ .094696	= 9.848
Fine Copper	313 parts by weight $\times$ .113250	= 35.447
Total	1000	75.405

Dividing 1000 by 75.405, we have 13.26, which is the specific gravity of the mixture.

Specific Gravity

Basic Formulas for Calculating Specific Gravity of Alloys

The following formulas are those from which the specific gravities given in this book have been computed. They are generally heavier than alloys in common use in the trade, since there is no allowance made for the use of zinc or other metals lighter in density than copper. As there are no alloys that could be called standard, it was thought best to be on the safe side by making the alloys a trifle heavy rather than have them light.

18K. GREEN GOLD

Specific Gravity.....15.88

Gold.....750 parts
Silver.....219 parts
Copper..... 31 parts

18K. YELLOW GOLD

Specific Gravity.....15.18

Gold.....750 parts
Silver..... 62.5 parts
Copper.....187.5 parts

18K. RED GOLD

Specific Gravity.....14.91

Gold.....750 parts
Copper.....250 parts

14K. GREEN GOLD

Specific Gravity.....14.17

Gold.....583 parts
Silver.....365 parts
Copper..... 52 parts

14K. YELLOW GOLD

Specific Gravity.....13.26

Gold.....583 parts
Silver.....104 parts
Copper.....313 parts

14K. RED GOLD

Specific Gravity.....12.93

Gold.....583 parts
Copper.....417 parts

10K. YELLOW GOLD

Specific Gravity.....11.78

Gold.....417 parts
Silver.....146 parts
Copper.....437 parts

10K. RED GOLD

Specific Gravity.....11.42

Gold.....417 parts
Copper.....583 parts

SPECIFIC GRAVITIES

18K. Green Gold.....15.88
18K. Yellow Gold.....15.18
18K. Red Gold 14.91
14K. Green Gold.....14.17
14K. Yellow Gold.....13.26
14K. Red Gold.....12.93
10K. Yellow Gold.....11.78
10K. Red Gold.....11.42
Sterling Silver.....10.41
Brass, wrought..... 8.40

Table of Comparative Weights of Equal Volumes

Brass

Platinum is . . . . . 2.563 times heavier than Brass.
18K. Yellow Gold is . . . . . 1.807 times heavier than Brass.
14K. Yellow Gold is . . . . . 1.579 times heavier than Brass.
10K. Yellow Gold is . . . . . 1.402 times heavier than Brass.
Sterling Silver is . . . . . 1.239 times heavier than Brass.
Copper is . . . . . 1.051 times heavier than Brass.

Copper

Platinum is . . . . . 2.438 times heavier than Copper.
18K. Yellow Gold is . . . . . 1.719 times heavier than Copper.
14K. Yellow Gold is . . . . . 1.502 times heavier than Copper.
10K. Yellow Gold is . . . . . 1.334 times heavier than Copper.
Sterling Silver is . . . . . 1.179 times heavier than Copper.

Sterling Silver

Platinum is . . . . . 2.068 times heavier than Sterling Silver.
18K. Yellow Gold is . . . . . 1.458 times heavier than Sterling Silver.
14K. Yellow Gold is . . . . . 1.274 times heavier than Sterling Silver.
10K. Yellow Gold is . . . . . 1.132 times heavier than Sterling Silver.

Lead

Platinum is . . . . . 1.895 times heavier than Lead.
18K. Yellow Gold is . . . . . 1.336 times heavier than Lead.
14K. Yellow Gold is . . . . . 1.167 times heavier than Lead.
10K. Yellow Gold is . . . . . 1.037 times heavier than Lead.

10k Yellow Gold

Platinum is . . . . . 1.868 times heavier than 10K. Yellow Gold.
18K. Yellow Gold is . . . 1.289 times heavier than 10K. Yellow Gold.
14K. Yellow Gold is . . . 1.125 times heavier than 10K. Yellow Gold.

14k Yellow Gold

Platinum is . . . . . 1.624 times heavier than 14K. Yellow Gold.
18K. Yellow Gold is . . . 1.145 times heavier than 14K. Yellow Gold.

18k Yellow Gold

Platinum is . . . . . 1.418 times heavier than 18K. Yellow Gold.

Note: Karat gold weights based on formulas shown on page 19

Sheet Tables

Weight in Pennyweights per Square Inch of Platinum, Fine and 18 Karat Gold in Brown & Sharpe Gauges from 1 to 40

Brown & Sharpe No.	Thousandths of an Inch	Platinum	24 Karat Gold	18 Karat Green Gold	18 Karat Yellow Gold	18 Karat Red Gold
		Dwts.	Dwts.	Dwts.	Dwts.	Dwts.
1	.28930	65.629	59.014	48.406	46.272	45.449
2	.25763	58.444	52.553	43.107	41.207	40.474
3	.22942	52.045	46.799	38.387	36.695	36.042
4	.20431	46.349	41.677	34.185	32.679	32.097
5	.18194	41.274	37.114	30.442	29.101	28.583
6	.16202	36.755	33.050	27.109	25.914	25.453
7	.14428	32.730	29.431	24.141	23.077	22.666
8	.12849	29.148	26.210	21.499	20.551	20.186
9	.11443	25.959	23.342	19.146	18.303	17.977
10	.10189	23.114	20.784	17.048	16.297	16.007
11	.09074	20.585	18.510	15.183	14.514	14.255
12	.08080	18.330	16.482	13.519	12.924	12.694
13	.07196	16.324	14.679	12.040	11.510	11.305
14	.06408	14.537	13.072	10.722	10.249	10.067
15	.05706	12.944	11.640	9.547	9.127	8.964
16	.05082	11.524	10.363	8.500	8.125	7.981
17	.04525	10.265	9.230	7.571	7.238	7.109
18	.04030	9.142	8.221	6.743	6.446	6.331
19	.03589	8.142	7.321	6.005	5.740	5.638
20	.03196	7.250	6.519	5.347	5.112	5.021
21	.02846	6.456	5.805	4.762	4.552	4.471
22	.02534	5.748	5.169	4.240	4.053	3.981
23	.02257	5.120	4.604	3.776	3.610	3.546
24	.02010	4.560	4.100	3.363	3.215	3.158
25	.01790	4.061	3.651	2.995	2.863	2.812
26	.01594	3.616	3.252	2.667	2.550	2.504
27	.01419	3.219	2.895	2.374	2.270	2.229
28	.01264	2.867	2.578	2.115	2.022	1.986
29	.01125	2.552	2.295	1.882	1.799	1.767
30	.01002	2.273	2.044	1.677	1.603	1 574
31	.00892	2.024	1.820	1.492	1.427	1.401
32	.00795	1.803	1.622	1.330	1.272	1.249
33	.00708	1.606	1.444	1.185	1.132	1.112
34	.00630	1.429	1.285	1.054	1.008	.990
35	.00561	1.273	1.144	.939	.897	.881
36	.00500	1.134	1.020	.837	.800	.786
37	.00445	1.010	.908	.745	.712	.699
38	.00396	.898	.808	.663	.633	.622
39	.00353	.801	.720	.591	.565	.555
40	.00314	.712	.641	.525	.502	.493

Note: Karat gold weights based on formulas shown on page 19

Sheet Tables

Weight in Pennyweights per Square Inch of 14 and 10 Karat Gold in Brown & Sharpe Gauges from 1 to 40

Brown & Sharpe No.	Thousandths of an Inch	14 Karat Green Gold Dwts.	14 Karat Yellow Gold Dwts.	14 Karat Red Gold Dwts.	10 Karat Yellow Gold Dwts.	10 Karat Red Gold Dwts.
1	.28930	43.194	40.419	39.414	35.908	34.811
2	.25763	38.465	35.995	35.099	31.977	31.000
3	.22942	34.253	32.053	31.256	28.476	27.606
4	.20431	30.504	28.545	27.835	25.359	24.584
5	.18194	27.164	25.420	24.787	22.582	21.892
6	16202	24.190	22.636	22.073	20.110	19.496
7	.14428	21.542	20.158	19.656	17.908	17.361
8	.12849	19.184	17.952	17.505	15.948	15.461
9	.11443	17.085	15.987	15.590	14.203	13.769
10	.10189	15.212	14.235	13.881	12.647	12.260
11	.09074	13.548	12.678	12.362	11.263	10.919
12	.08080	12.064	11.289	11.008	10.029	9.723
13	.07196	10.744	10.054	9.804	8.932	8.659
14	.06408	9.567	8.953	8.730	7.954	7.711
15	.05706	8.519	7.972	7.774	7.082	6.866
16	.05082	7.585	7.097	6.921	6.305	6.113
17	.04525	6.756	6.322	6.165	5.616	5.445
18	.04030	6.017	5.630	5.490	5.002	4.849
19	.03589	5.359	5.014	4.890	4.455	4.319
20	.03196	4.772	4.465	4.354	3.967	3.846
21	.02846	4.249	3.976	3.877	3.532	3.425
22	.02534	3.783	3.540	3.452	3.145	3.049
23	.02257	3.370	3.153	3.075	2.801	2.716
24	.02010	3.001	2.808	2.738	2.495	2.419
25	.01790	2.673	2.501	2.439	2.222	2.154
26	.01594	2.380	2.227	2.172	1.978	1.918
27	.01419	2.119	1.983	1.933	1.761	1.707
28	.01264	1.887	1.766	1.722	1.569	1.521
29	.01125	1.680	1.572	1.533	1.396	1.354
30	.01002	1.496	1.400	1.365	1.244	1.206
31	.00892	1.332	1.246	1.215	1.107	1.073
32	.00795	1.187	1.111	1.083	.987	.957
33	.00708	1.057	.989	.965	.879	.852
34	.00630	.941	.880	.858	.782	.758
35	.00561	.837	.784	.764	.696	.675
36	.00500	.747	.699	.681	.621	.602
37	.00445	.664	.622	.606	.552	.535
38	.00396	.591	.553	.540	.492	.476
39	.00353	.527	.493	.481	.438	.425
40	.00314	.469	.439	.428	.390	.378

Note: Karat gold weights based on formulas shown on page 19

Unit Sheet Table

Weight of a Square Inch of Metals Shown One Thousandth of an Inch Thick

		Ounces Troy	Dwts. Troy
Platinum	1″ sq. × .001 weighs	.0113427 or	.226854
24K. Gold	1″ sq. × .001 weighs	.0101994 or	.203988
18K. Gold, Green	1″ sq. × .001 weighs	.0083660 or	.167320
18K. Gold, Yellow	1″ sq. × .001 weighs	.0079973 or	.159946
18K. Gold, Red	1″ sq. × .001 weighs	.0078550 or	.157100
14K. Gold, Green	1″ sq. × .001 weighs	.0074652 or	.149304
14K. Gold, Yellow	1″ sq. × .001 weighs	.0069857 or	.139714
14K. Gold, Red	1″ sq. × .001 weighs	.0068119 or	.136238
10K. Gold, Yellow	1″ sq. × .001 weighs	.0062060 or	.124120
10K. Gold, Red	1″ sq. × .001 weighs	.0060164 or	.120328
Fine Silver	1″ sq. × .001 weighs	.0055637 or	.111274
Sterling Silver	1″ sq. × .001 weighs	.0054843 or	.109686
Fine Copper	1″ sq. × .001 weighs	.0046519 or	.093038
Brass, wrought	1″ sq. × .001 weighs	.0044254 or	.088508

To find the weight of a piece of any of the above metals of any given size and thickness, multiply the weight of one square inch of the metal .001 inches thick, as shown above, by the decimal thickness desired, and then multiply this product by the number of square inches in the given piece. The result will be the troy weight of the piece. For example: Required the weight of a piece of 14K. yellow gold 3″×4″ gauge .020. From the table, one square inch of 14K. yellow gold .001 or one thousandth of an inch thick weighs .139714 dwt., therefore 1 square inch .020 or 20 thousandths would weigh twenty times .139714, or 2.79428 dwt., and since there are 3×4 or 12 square inches in the piece, the total weight would be 12×2.79428 dwt., or 33.53 dwt.

Note: Karat gold weights based on formulas shown on page 19

Unit Wire Table

Weight of Round Wire in Dwts.

Square wire is 1.27324 times as heavy as round wire of the same gauge.

		Dwts.
1 foot of round Platinum Wire	.001″ in diameter, weighs	.002138
1 foot of round 24K. Gold Wire	.001″ in diameter, weighs	.001923
1 foot of round 18K. Green Gold Wire	.001″ in diameter, weighs	.001577
1 foot of round 18K. Yellow Gold Wire	.001″ in diameter, weighs	.001507
1 foot of round 18K. Red Gold Wire	.001″ in diameter, weighs	.001481
1 foot of round 14K. Green Gold Wire	.001″ in diameter, weighs	.001407
1 foot of round 14K. Yellow Gold Wire	.001″ in diameter, weighs	.001317
1 foot of round 14K. Red Gold Wire	.001″ in diameter, weighs	.001284
1 foot of round 10K. Yellow Gold Wire	.001″ in diameter, weighs	.001170
1 foot of round 10K. Red Gold Wire	.001″ in diameter, weighs	.001134
1 foot of round Fine Silver Wire	.001″ in diameter, weighs	.001049
1 foot of round Sterling Silver Wire	.001″ in diameter, weighs	.001034
1 foot of round Copper Wire	.001″ in diameter, weighs	.000877

How to Use the Wire Tables

Take the number of thousandths in the diameter of the wire whose weight you wish to determine, square that figure, (multiply it by itself) and multiply the product by the weight of 1 ft. of wire of the corresponding metal shown in the above table. The result will be the weight of one foot of the wire. To find the weight of the entire piece multiply the weight of one foot by the number of feet in the piece.

Example: To find weight of 50 ft. of round platinum wire .020 diameter.

$20 \times 20 = 400$

Platinum wire weighs .002138 dwts. (See table.)

$400 \times .002138 = .8552$ dwts., the weight of 1 foot multiplied by $50 =$ 42.760 dwts., the weight of the piece.

For square wire the process is the same.

Note: Karat gold weights based on formulas shown on page 19

Wire Tables

Weight per linear foot of round wire of Platinum, Fine and 18 Karat Gold in Brown & Sharpe Gauges from 1 to 40

Square wire is 1.27324 times as heavy as round wire of the same gauge

Brown & Sharpe No.	Thousandths of an Inch	Platinum	24 Karat Gold	18 Karat Green Gold	18 Karat Yellow Gold	18 Karat Red Gold
		Dwts.	Dwts.	Dwts.	Dwts.	Dwts.
1	.28930	178.9406	160.9052	131.9812	126.1639	123.9199
2	.25763	141.9078	127.6050	104.6669	100.0535	98.2740
3	.22942	112.5312	101.1892	82.9996	79.3412	77.9301
4	.20431	89.2458	80.2508	65.8250	62.9236	61.8045
5	.18194	70.7732	63.6400	52.2002	49.8994	49.0119
6	.16202	56.1234	50.4668	41.3949	39.5704	38.8666
7	.14428	44.5074	40.0214	32.8273	31.3804	30.8223
8	.12849	35.2990	31.7412	26.0355	24.8879	24.4453
9	.11443	27.9954	25.1738	20.6486	19.7384	19.3874
10	.10189	22.1970	19.9598	16.3718	15.6502	15.3719
11	.09074	17.6039	15.8296	12.9841	12.4118	12.1911
12	.08080	13.9584	12.5515	10.2953	9.8415	9.6665
13	.07196	11.0712	9.9553	8.1658	7.8059	7.6670
14	.06408	8.7792	7.8943	6.4753	6.1899	6.0798
15	.05706	6.9610	6.2594	5.1342	4.9079	4.8206
16	.05082	5.5217	4.9651	4.0726	3.8931	3.8239
17	.04525	4.3778	3.9366	3.2289	3.0866	3.0317
18	.04030	3.4724	3.1224	2.5611	2.4483	2.4047
19	.03589	2.7540	2.4764	2.0313	1.9417	1.9072
20	.03196	2.1838	1.9637	1.6107	1.5397	1.5123
21	.02846	1.7318	1.5573	1.2773	1.2210	1.1993
22	.02534	1.3728	1.2345	1.0125	.9679	.9507
23	.02257	1.0891	.9793	.8033	.7679	.7542
24	.02010	.86376	.7767	.6371	.6090	.5982
25	.01790	.68502	.6160	.5053	.4830	.4744
26	.01594	.54328	.4885	.4007	.3830	.3762
27	.01419	.43060	.3872	.3176	.3036	.2982
28	.01264	.34166	.3072	.2520	.2409	.2366
29	.01125	.27068	.2434	.1996	.1908	.1875
30	.01002	.21466	.1930	.1583	.1513	.1487
31	.00892	.17018	.1530	.1255	.1200	.1179
32	.00795	.13512	.1215	.0997	.0953	.0936
33	.00708	.10712	.0963	.0790	.0755	.0742
34	.00630	.08488	.0763	.0626	.0598	.0588
35	.00561	.06734	.0606	.0497	.0475	.0466
36	.00500	.05346	.0481	.0394	.0377	.0370
37	.00445	.04234	.0381	.0312	.0299	.0293
38	.00396	.03356	.0302	.0248	.0237	.0232
39	.00353	.02664	.0240	.0196	.0188	.0184
40	.00314	.02108	.0190	.0155	.0149	.0146

Note: Karat gold weights based on formulas shown on page 19

"Special Refined"—the purest silver you can buy for alloying

Wire Tables

Weight per linear foot of round wire of 14 and 10 Karat Gold in Brown & Sharpe Gauges from 1 to 40

Square wire is 1.27324 times as heavy as round wire of the same gauge

Brown & Sharpe No.	Thousandths of an Inch	14 Karat Green Gold	14 Karat Yellow Gold	14 Karat Red Gold	10 Karat Yellow Gold	10 Karat Red Gold
		Dwts.	Dwts.	Dwts.	Dwts.	Dwts.
1	.28930	117.7698	110.2059	107.4628	97.9056	94.9137
2	.25763	93.3966	87.3982	85.2227	77.6434	75.2707
3	.22942	74.0624	69.3057	67.5806	61.5703	59.6888
4	.20431	58.7371	54.9647	53.5966	48.8299	47.3378
5	.18194	46.5794	43.5878	42.5028	38.7228	37.5395
6	.16202	36.9376	34.5653	33.7049	30.7074	29.7690
7	.14428	29.2925	27.4112	26.7289	24.3518	23.6076
8	.12849	23.2320	21.7399	21.1988	19.3135	18.7233
9	.11443	18.4252	17.2418	16.8126	15.3174	14.8493
10	.10189	14.6090	13.6707	13.3304	12.1449	11.7737
11	.09074	11.5860	10.8419	10.5720	9.6318	9.3375
12	.08080	9.1867	8.5967	8.3827	7.6372	7.4038
13	.07196	7.2865	6.8185	6.6488	6.0575	5.8724
14	.06408	5.7780	5.4069	5.2723	4.8035	4.6567
15	.05706	4.5814	4.2871	4.1804	3.8086	3.6923
16	.05082	3.6341	3.4007	3.3161	3.0211	2.9288
17	.04525	2.8812	2.6962	2.6291	2.3953	2.3221
18	.04030	2.2854	2.1386	2.0853	1.8999	1.8418
19	.03589	1.8125	1.6961	1.6539	1.5068	1.4608
20	.03196	1.4373	1.3450	1.3115	1.1948	1.1583
21	.02846	1.1398	1.0666	1.0400	.9475	.9186
22	.02534	.9035	.8455	.8244	.7511	.7282
23	.02257	.7168	.6708	.6541	.5959	.5777
24	.02010	.5685	.5320	.5187	.4726	.4582
25	.01790	.4508	.4219	.4114	.3748	.3633
26	.01594	.3576	.3346	.3263	.2973	.2882
27	.01419	.2834	.2652	.2586	.2356	.2284
28	.01264	.2249	.2104	.2052	.1869	.1812
29	.01125	.1781	.1667	.1626	.1481	.1436
30	.01002	.1413	.1322	.1289	.1174	.1139
31	.00892	.1120	.1048	.1022	.0931	.0903
32	.00795	.0889	.0832	.0811	.0739	.0717
33	.00708	.0705	.0660	.0643	.0586	.0568
34	.00630	.0559	.0523	.0510	.0464	.0450
35	.00561	.0443	.0415	.0404	.0368	.0357
36	.00500	.0352	.0329	.0321	.0293	.0284
37	.00445	.0279	.0261	.0254	.0232	.0225
38	.00396	.0221	.0207	.0202	.0184	.0178
39	.00353	.0175	.0164	.0160	.0146	.0141
40	.00314	.0139	.0130	.0127	.0115	.0112

Note: Karat gold weights based on formulas shown on page 19

Miscellaneous Information

The circumference of a circle is the diameter multiplied by 3.1416.

The diameter of a circle is the circumference multiplied by .31831.

The area of a circle is the diameter squared, multiplied by .7854.

The area of an oval is the longest diameter multiplied by the shortest, multiplied by .7854.

A circle is .7854 times as heavy as a square of the same diameter; that is, the loss in cutting a circle from a sqaure is .2146 per cent of the weight of the square.

Fine silver is 1.0144 times as heavy as sterling silver.

Sterling silver is .9858 times as heavy as fine silver.

1 gram weighs 0.03527 ozs. avoirdupois.

1 gram weighs 0.03215 ozs. troy.

1 oz. avoirdupois weighs 28.3495 grams.

1 oz. troy weighs 31.10348 grams.

1 gram weighs 15.4324 grains.

1 grain weighs 0.0648 grams.

1 kilogram weighs 32.15076 ozs. troy.

1 kilogram weighs 2.20462 lbs. avoirdupois.

1 ligne equals 2.256 millimeters.

1 ligne equals .0888 inches.

Easy silver solder is .667 fine.

Medium silver solder is .750 fine.

Hard silver solder is .800 fine.

Coin silver is .900 fine.

"Special Refined" silver is refined especially for alloying

Comparison of Pure Platinum with Iridium-Platinum

5% Iridium-Platinum is 1.00195 times as heavy as Pure Platinum.
10% Iridium-Platinum is 1.00390 times as heavy as Pure Platinum.
15% Iridium-Platinum is 1.00585 times as heavy as Pure Platinum.
20% Iridium-Platinum is 1.00780 times as heavy as Pure Platinum.
25% Iridium-Platinum is 1.00980 times as heavy as Pure Platinum.
30% Iridium-Platinum is 1.01175 times as heavy as Pure Platinum.

Densities and Melting Points of Metals

Metal	Melting Point Fahrenheit	Melting Point Centigrade	Specific Gravity
Tin	450 deg.	232 deg.	7.29
Bismuth	518 "	270 "	9.80
Cadmium	610 "	321 "	8.67
Lead	621 "	327 "	11.36
Zinc	786 "	419 "	7.00
Antimony	1166 "	630 "	6.70
Aluminum	1216 "	658 "	2.67
Silver	1762 "	961 "	10.56
Gold	1945 "	1063 "	19.36
Copper	1981 "	1083 "	8.83
Manganese	2237 "	1225 "	7.39
Nickel	2642 "	1450 "	8.90
Cobalt	2714 "	1490 "	8.70
Chromium	2741 "	1505 "	6.50
Iron, pure	2768 "	1520 "	7.86
Palladium	2822 "	1550 "	11.80
Platinum	3191 "	1755 "	21.53
Rhodium	3488 "	1920 "	12.10
Iridium	4307 "	2375 "	22.40

Approximate Temperatures by Color

	Fahrenheit	Centigrade
First visible red	977 deg.	525 deg.
Dull red	1292 "	700 "
Cherry red	1652 "	900 "
Dull orange	2012 "	1100 "
White	2372 "	1300 "
Dazzling white	2732 "	1500 "

Degrees Centigrade $\times$ 1.8 + 32 = Degrees Fahrenheit.

$$\frac{\text{Degrees Fahrenheit} - 32}{1.8} = \text{Degrees Centigrade.}$$

Sterling Sheet Table

Weight per foot of Sterling Silver from 1 inch to 7 inches wide

Brown & Sharpe Gauge	Thousandths of an inch	1′x 1″	1′x 2″	1′x 3″	1′x 4″	1′x 5″	1′x 6″	1′x 7″
		Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
1	.28930	19.25	38.55	57.80	77.05	96.35	115.60	134.85
2	.25763	17.15	34.25	51.40	68.55	85.65	102.80	119.95
3	.22942	15.25	30.55	45.80	61.05	76.35	91.60	106.85
4	.20431	13.60	27.20	40.80	54.40	68.00	81.60	95.20
5	.18194	12.15	24.25	36.40	48.55	60.65	72.80	84.95
6	.16202	10.80	21.60	32.40	43.20	54.00	64.80	75.60
7	.14428	9.60	19.20	28.80	38.40	48.00	57.60	67.20
8	.12849	8.55	17.05	25.60	34.15	42.65	51.20	59.75
9	.11443	7.60	15.20	22.80	30.40	38.00	45.60	53.20
10	.10189	6.80	13.60	20.40	27.20	34.00	40.80	47.60
11	.09074	6.00	12.00	18.00	24.00	30.00	36.00	42.00
12	.08080	5.35	10.65	16.00	21.35	26.65	32.00	37.35
13	.07196	4.75	9.45	14.20	18.95	23.65	28.40	33.15
14	.06408	4.25	8.55	12.80	17.05	21.35	25.60	29.90
15	.05706	3.80	7.60	11.40	15.20	19.00	22.80	26.60
16	.05082	3.40	6.80	10.20	13.60	17.00	20.40	23.80
17	.04525	3.00	6.00	9.00	12.00	15.00	18.00	21.00
18	.04030	2.65	5.35	8.00	10.65	13.35	16.00	18.65
19	.03589	2.40	4.80	7.20	9.60	12.00	14.40	16.80
20	.03196	2.15	4.25	6.40	8.55	10.65	12.80	14.95
21	.02846	1.85	3.75	5.60	7.45	9.35	11.20	13.05
22	.02534	1.65	3.35	5.00	6.65	8.35	10.00	11.65
23	.02257	1.50	3.00	4.50	6.00	7.50	9.00	10.50
24	.02010	1.35	2.65	4.00	5.35	6.65	8.00	9.35
25	.01790	1.20	2.40	3.60	4.80	6.00	7.20	8.40
26	.01594	1.05	2.15	3.20	4.25	5.35	6.40	7.45
27	.01419	.95	1.85	2.80	3.75	4.65	5.80	6.55
28	.01264	.85	1.65	2.50	3.35	4.15	5.00	5.85
29	.01125	.75	1.45	2.20	2.95	3.65	4.40	5.15
30	.01002	.65	1.35	2.00	2.65	3.35	4.00	4.65
31	.00892	.60	1.20	1.80	2.40	3.00	3.60	4.20
32	.00795	.55	1.05	1.60	2.15	2.65	3.20	3.75
33	.00708	.45	.95	1.40	1.85	2.35	2.80	3.25
34	.00630	.42	.83	1.25	1.67	2.08	2.50	2.92
35	.00561	.36	.67	1.10	1.47	1.83	2.20	2.57
36	.00500	.33	66	1.00	1.33	1.66	2.00	2.33

Our Sterling Silver has a reputation

Sterling Sheet Table

Weight per foot of Sterling Silver from 8 inches to 14 inches wide

Brown & Sharpe Gauge	Thousandths of an inch	1′x 8″ Ozs.	1′x 9″ Ozs.	1′x 10″ Ozs.	1′x 11″ Ozs.	1′x 12″ Ozs.	1′x 13″ Ozs.	1′x 14″ Ozs.
1	.28930	154.15	173.40	192.65	211.95	231.20	250.60	269.75
2	.25763	137.05	154.20	171.35	188.45	205.60	222.75	239.85
3	.22942	122.15	137.40	150.65	165.95	183.20	198.45	213.75
4	.20431	108.80	122.40	136.00	149.60	163.20	176.80	190.40
5	.18194	97.05	109.20	121.35	133.45	145.60	157.75	169.85
6	.16202	86.40	97.20	108.00	118.80	129.60	140.40	151.20
7	.14428	76.80	86.40	96.00	105.60	115.20	124.80	134.40
8	.12849	68.55	76.80	85.35	93.85	102.40	110.95	119.45
9	.11443	60.80	68.40	76.00	83.60	91.20	98.80	106.40
10	.10189	54.40	61.20	68.00	74.80	81.60	88.40	95.20
11	.09074	48.00	54.00	60.00	66.00	72.00	78.00	84.00
12	.08080	42.65	48.00	53.35	58.65	64.00	69.35	74.65
13	.07196	37.85	42.60	47.35	52.05	56.80	61.55	66.25
14	.06408	34.15	38.40	42.65	46.95	51.20	55.45	59.75
15	.05706	30.40	34.20	38.00	41.80	45.60	49.40	53.20
16	.05082	27.20	30.60	34.00	37.40	40.80	44.20	47.60
17	.04525	24.00	27.00	30.00	33.00	36.00	39.00	42.00
18	.04030	21.35	24.00	26.65	29.35	32.00	34.65	37.35
19	.03589	18.20	21.60	24.00	26.40	28.80	31.20	33.60
20	.03196	17.05	19.20	21.35	23.45	25.60	27.75	29.85
21	.02846	14.95	16.80	18.65	20.55	22.40	24.25	26.15
22	.02534	13.35	15.00	16.65	18.35	20.00	21.65	23.35
23	.02257	12.00	13.50	15.00	16.50	18.00	19.50	21.00
24	.02010	10.65	12.00	13.35	14.65	16.00	17.35	18.65
25	.01790	9.60	10.80	12.00	13.20	14.40	15.60	16.80
26	.01594	8.55	9.60	10.65	11.75	12.80	13.85	14.95
27	.01419	7.45	8.40	9.35	10.25	11.20	12.15	13.05
28	.01264	6.65	7.50	8.35	9.15	10.00	10.85	11.65
29	.01125	5.85	6.60	7.25	8.05	8.80	9.55	10.25
30	.01002	5.35	6.00	6.65	7.35	8.00	8.65	9.35
31	.00892	4.80	5.40	6.00	6.60	7.20	7.80	8.40
32	.00795	4.25	4.80	5.35	5.85	6.40	6.95	7.45
33	.00708	3.75	4.20	4.65	5.15	5.60	6.05	6.55
34	.00630	3.33	3.75	4.17	4.58	5.00	5.42	5.83
35	.00561	2.93	3.30	3.67	4.03	4.40	4.77	5.13
36	.00500	2.66	3.00	3.33	3.66	4.00	4.33	4.66

Our Sterling Silver is .927 fine—ALWAYS

Sterling Sheet Table

Weight per foot of Sterling Silver from 15 inches to 20 inches wide

Brown & Sharpe Gauge	Thousandths of an inch	1′x 15″	1′x 16″	1′x 17″	1′x 18″	1′x 19″	1′x 20″
		Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
1	.28930	289.00	308.25	327.55	346.80	366.05	385.35
2	.25763	257.00	274.15	291.25	308.40	325.55	342.65
3	.22942	229.00	244.25	259.55	274.80	290.05	305.35
4	.20431	204.00	217.60	231.20	244.80	258.40	272.00
5	.18194	182.00	194.15	206.25	218.40	230.55	242.65
6	.16202	162.00	172.80	183.60	194.40	205.20	216.00
7	.14428	144.00	153.60	163.20	172.80	182.40	192.00
8	.12849	128.00	136.55	145.05	153.60	162.15	170.65
9	.11443	114.00	121.60	129.20	136.80	144.40	152.00
10	.10189	102.00	108.80	115.60	122.40	129.20	136.00
11	.09074	90.00	96.00	102.00	108.00	114.00	120.00
12	.08080	80.00	85.35	90.65	96.00	101.35	106.65
13	.07196	71.00	75.75	80.45	85.20	89.95	94.65
14	.06408	64.00	68.25	72.55	76.80	81.05	85.35
15	.05706	57.00	60.80	64.60	68.40	72.20	76.00
16	.05082	51.00	54.40	57.80	61.20	64.60	68.00
17	.04525	45.00	48.00	51.00	54.00	57.00	60.00
18	.04030	40.00	42.65	45.35	48.00	50.65	53.35
19	.03589	36.00	38.40	40.80	43.20	45.60	48.00
20	.03196	32.00	34.15	36.25	38.40	40.55	42.65
21	.02846	28.00	29.85	31.75	33.60	35.45	37.35
22	.02534	25.00	26.65	28.35	30.00	31.65	33.35
23	.02257	22.50	24.00	25.50	27.00	28.50	30.00
24	.02010	20.00	21.35	22.65	24.00	25.35	26.65
25	.01790	18.00	19.20	20.40	21.60	22.80	24.00
26	.01594	16.00	17.05	18.15	19.20	20.25	21.35
27	.01419	14.00	14.95	15.85	16.80	17.75	18.65
28	.01264	12.50	13.35	14.15	15.00	15.85	16.65
29	.01125	11.00	11.75	12.45	13.20	13.95	14.65
30	.01002	10.00	10.65	11.35	12.00	12.65	13.35
31	.00892	9.00	9.60	10.20	10.80	11.40	12.00
32	.00795	8.00	8.55	9.05	9.60	10.15	10.65
33	.00708	7.00	7.45	7.95	8.40	8.85	9.35
34	.00630	6.25	6.67	7.08	7.50	7.92	8.33
35	.00561	5.50	5.87	6.23	6.60	6.97	7.33
36	.00500	5.00	5.33	5.66	6.00	6.33	6.66

Silver Sheet and Wire

Weight per square inch of Sterling and Fine Silver Sheet, Brown and Sharpe Gauges 1 to 40.

Brown & Sharpe No.	Thousandths of an inch	Sterling Silver Ozs.	Fine Silver Ozs.
1	.28930	1.5866	1.6096
2	.25763	1.4129	1.4334
3	.22942	1.2582	1.2764
4	.20431	1.1205	1.1367
5	.18194	.9978	1.0123
6	.16202	.8886	.9014
7	.14428	.7913	.8027
8	.12849	.7047	.7149
9	.11443	.6276	.6367
10	.10189	.5588	.5669
11	.09074	.4976	.5049
12	.08080	.4431	.4495
13	.07196	.3947	.4004
14	.06408	.3514	.3565
15	.05706	.3129	.3175
16	.05082	.2786	.2826
17	.04525	.2482	.2518
18	.04030	.2210	.2242
19	.03589	.1968	.1997
20	.03196	.1753	.1778
21	.02846	.1561	.1583
22	.02534	.1390	.1410
23	.02257	.1238	.1256
24	.02010	.1102	.1118
25	.01790	.0982	.0996
26	.01594	.0874	.0887
27	.01419	.0778	.0789
28	.01264	.0693	.0703
29	.01125	.0617	.0626
30	.01002	.0550	.0557
31	.00892	.0489	.0496
32	.00795	.0436	.0442
33	.00708	.0388	.0394
34	.00630	.0346	.0351
35	.00561	.0308	.0312
36	.00500	.0274	.0278
37	.00445	.0244	.0248
38	.00396	.0217	.0220
39	.00353	.0194	.0196
40	.00314	.0172	.0175

Weight per linear foot of Sterling and Fine Silver round Wire, Brown and Sharpe Gauges 1 to 40.

Brown & Sharpe No.	Thousandths of an inch	Sterling Silver Ozs.	Fine Silver Ozs.
1	.28930	4.3260	4.3883
2	.25763	3.4307	3.4801
3	.22942	2.7205	2.7597
4	.20431	2.1576	2.1886
5	.18194	1.7110	1.7356
6	.16202	1.3568	1.3763
7	.14428	1.0760	1.0915
8	.12849	.8534	.8657
9	.11443	.6768	.6866
10	.10189	.5366	.5444
11	.09074	.4256	.4317
12	.08080	.3375	.3423
13	.07196	.2677	.2715
14	.06408	.2122	.2153
15	.05706	.1683	.1707
16	.05082	.1335	.1354
17	.04525	.1058	.1074
18	.04030	.0840	.0852
19	.03589	.0666	.0675
20	.03196	.0528	.0536
21	.02846	.0419	.0425
22	.02534	.0332	.0337
23	.02257	.0263	.0267
24	.02010	.0209	.0212
25	.01790	.0166	.0168
26	.01594	.0131	.0133
27	.01419	.0104	.0106
28	.01264	.00826	.00838
29	.01125	.00654	.00664
30	.01002	.00519	.00526
31	.00892	.00411	.00417
32	.00795	.00327	.00331
33	.00708	.00259	.00263
34	.00630	.00205	.00208
35	.00561	.00163	.00165
36	.00500	.00129	.00131
37	.00445	.00102	.00104
38	.00396	.00081	.00082
39	.00353	.00064	.00065
40	.00314	.00051	.00052

Sterling and Fine Silver Round Wire Per Foot

Fractions of an inch	Sterling Silver Ozs.	Fine Silver Ozs.	Fractions of an inch	Sterling Silver Ozs.	Fine Silver Ozs.
1/16″	.2019	.2048	7/16″	9.8934	10.0358
1/8″	.8076	.8193	1/2″	12.9220	13.1080
3/16″	1.8172	1.8433	9/16″	16.3544	16.5898
1/4″	3.2305	3.2770	5/8″	20.1907	20.4813
5/16″	5.0477	5.1203	11/16″	24.4307	24.7824
3/8″	7.2686	7.3733	3/4″	29.0745	29.4961

Sterling Circles

Weights of Circles in Sterling Silver

No. 15 to No. 21 B. & S. Gauge

Diameter of circle in inches	B. & S. 15-Ga. .05706	B. & S. 16-Ga. .05082	B. & S. 17-Ga. .04525	B. & S. 18-Ga. .04030	B. & S. 19-Ga. .03589	B. & S. 20-Ga. .03196	B. & S. 21-Ga. .02846
	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
1	.25	.22	.20	.18	.16	.14	.12
2	1.00	.90	.80	.70	.65	.55	.50
3	2.25	2.00	1.75	1.55	1.40	1.25	1.10
4	4.00	3.55	3.15	2.80	2.50	2.25	2.00
5	6.20	5.55	4.95	4.40	3.90	3.50	3.10
6	8.95	8.00	7.10	6.35	5.65	5.00	4.45
7	12.20	10.90	9.70	8.65	7.70	6.85	6.10
8	15.90	14.25	12.65	11.25	10.05	8.95	7.95
9	20.15	18.00	16.00	14.25	12.70	11.30	10.05
10	24.85	22.25	19.75	17.60	15.70	13.95	12.45
11	30.10	26.90	23.90	21.30	19.00	16.90	15.05
12	35.80	32.05	28.45	25.35	22.60	20.10	17.90
13	42.05	37.60	33.35	29.75	26.55	23.60	21.00
14	48.75	43.60	38.70	34.50	30.80	27.35	24.35
15	55.95	50.05	44.40	39.60	35.35	31.40	27.95
16	63.65	56.95	50.55	45.05	40.20	35.75	31.85
17	71.85	64.30	57.05	50.85	45.40	40.35	35.95
18	80.60	72.10	63.95	57.00	50.90	45.25	40.30
19	89.80	80.35	71.25	63.50	56.70	50.40	44.90
20	99.50	89.00	78.95	70.40	62.85	55.85	49.75
21	109.65	98.15	87.05	77.60	69.25	61.55	54.85
22	120.30	107.65	95.50	85.15	76.00	67.55	60.15
23	131.55	117.70	104.45	93.05	83.05	73.85	65.75
24	143.25	128.15	113.70	101.35	90.45	80.40	71.60
25	155.40	139.05	123.40	110.00	98.15	87.25	77.70

Sterling Circles

Weights of Circles in Sterling Silver
No. 22 to No. 28 B. & S. Gauge

Diameter of circle in inches	B. & S. 22-Ga. .02534	B. & S. 23-Ga. .02257	B. & S. 24-Ga. .0201	B. & S. 25-Ga. .0179	B. & S. 26-Ga. .01594	B. & S. 27-Ga. .01419	B. & S. 28-Ga. .01264
	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
1	.11	.098	.087	.078	.069	.061	.054
2	.45	.40	.35	.30	.28	.25	.22
3	1.00	.90	.80	.70	.65	.55	.50
4	1.75	1.55	1.40	1.25	1.10	.95	.85
5	2.75	2.45	2.20	1.95	1.75	1.50	1.35
6	4.00	3.55	3.15	2.80	2.50	2.20	1.95
7	5.40	4.80	4.30	3.85	3.40	3.00	2.70
8	7.05	6.30	5.60	5.00	4.45	3.90	3.50
9	8.95	7.95	7.05	6.35	5.65	4.95	4.40
10	11.05	9.80	8.70	7.85	7.00	6.10	5.45
11	13.35	11.85	10.55	9.50	8.45	7.40	6.60
12	15.90	14.15	12.55	11.30	10.05	8.80	7.85
13	18.70	16.60	14.75	13.25	11.80	10.30	9.20
14	21.65	19.25	17.10	15.40	13.70	11.95	10.70
15	24.85	22.10	19.65	17.65	15.70	13.75	12.25
16	28.30	25.15	22.35	20.10	17.85	15.65	13.95
17	31.95	28.35	25.20	22.70	20.15	17.65	15.75
18	35.80	31.80	28.25	25.45	22.60	19.80	17.65
19	39.90	35.45	31.50	28.35	25.20	22.05	19.70
20	44.20	39.25	34.90	31.40	27.90	24.45	21.80
21	48.75	43.30	38.50	34.65	30.80	26.95	24.05
22	53.50	47.50	42.20	38.00	33.75	29.55	26.40
23	58.45	51.90	46.15	41.50	36.90	32.30	28.85
24	63.65	56.55	50.25	45.25	40.20	35.20	31.40
25	69.10	61.35	54.55	49.05	43.60	38.15	34.10

Sterling Circles

Weights of Circles in Sterling Silver
No. 29 to No. 36 B. & S. Gauge

Diameter of circle in inches	B. & S. 29-Ga. .01125	B. & S. 30-Ga. .01002	B. & S. 31-Ga. .00892	B. & S. 32-Ga. .00795	B. & S. 33-Ga. .00708	B. & S. 34-Ga. .0063	B. & S. 35-Ga. .00561	B. & S. 36-Ga. .005
	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
1	.047	.043	.039	.034	.030	.027	.023	.021
2	.19	.175	.157	.14	.122	.11	.096	.087
3	.45	.40	.35	.31	.275	.25	.216	.196
4	.80	.70	.60	.54	.50	.45	.384	.35
5	1.20	1.10	1.00	.85	.75	.70	.60	.55
6	1.75	1.55	1.40	1.25	1.10	1.00	.85	.80
7	2.40	2.15	1.90	1.70	1.50	1.35	1.15	1.05
8	3.15	2.80	2.50	2.25	1.95	1.75	1.55	1.40
9	4.00	3.55	3.20	2.80	2.45	2.25	1.95	1.75
10	4.90	4.35	3.90	3.50	3.05	2.70	2.40	2.20
11	5.95	5.25	4.75	4.20	3.70	3.30	2.90	2.65
12	7.05	6.30	5.65	5.00	4.40	3.90	3.45	3.15
13	8.30	7.35	6.65	5.90	5.15	4.60	4.05	3.70
14	9.60	8.55	7.70	6.85	6.00	5.35	4.70	4.25
15	11.05	9.80	8.85	7.85	6.85	6.15	5.40	4.90
16	12.55	11.15	10.05	8.95	7.80	7.00	6.15	5.60
17	14.20	12.60	11.35	10.10	8.80	8.00	6.95	6.30
18	15.90	14.15	12.70	11.30	9.90	8.85	7.75	7.05
19	17.70	15.75	14.15	12.60	11.00	9.85	8.65	7.85
20	19.65	17.45	15.70	13.95	12.20	10.90	9.60	8.70
21	21.65	19.25	17.30	15.40	13.45	12.20	10.60	9.60
22	23.70	21.10	19.00	16.85	14.75	13.35	11.60	10.55
23	25.95	23.10	20.75	18.95	16.15	14.60	12.70	11.55
24	28.25	25.15	22.60	20.10	17.60	15.90	13.80	12.55
25	30.65	27.25	24.50	21.80	19.05	17.25	15.00	13.65

Sterling Silver of uniform gauge and quality

Sterling Circles

Areas and Weights of Circles

Diameter of circle in Inches	Area of Circle in Square Inches	Weight in decimal parts of an oz. Troy weight of circle Ga. .001
1	.7854	.00436
2	3.1416	.01755
3	7.0686	.0393
4	12.5664	.0698
5	19.635	.109
6	28.2744	.157
7	38.4846	.214
8	50.2656	.2792
9	63.6174	.3534
10	78.54	.4363
11	95.0334	.5279
12	113.0976	.6283
13	132.7326	.7374
14	153.9384	.8552
15	176.715	.9817
16	201.0624	1.117
17	226.9806	1.261
18	254.4696	1.4137
19	283.5294	1.5751
20	314.16	1.7453
21	346.3614	1.9242
22	380.1336	2.111
23	415.4766	2.308
24	452.3904	2.5132
25	490.87	2.727

Above weights are for a thickness of $\frac{1}{1000}$ of an inch. To find the weight of any given circle, multiply the weight given in the last column for that diameter by the thickness of your circle in thousandths.

Waste Solutions

Recovery of Silver and Gold from Cyanide Solutions

BOTH silver and gold may be recovered from cyanide solutions by adding acids and allowing to stand until thoroughly settled, draining off the top which is clear, taking care to test for values before throwing the solution away. Silver cyanide solution may also be precipitated by using "Liver of Sulphur", (Potassium Sulphate) allowing to stand ten or twelve hours, and pouring off the clear solution after testing for value.

The cleanest and surest method, however, is to place the solution in a clean, tight tank, or crock, if small in quantity, and add zinc dust or shavings to the solution. The amount of zinc need not be exact and depends upon the richness of the solution in metal values. Care should be taken to have an excess of zinc and about two ounces of zinc per gallon of solution is sufficient for solutions of average strength. After adding the zinc, an occasional stirring is beneficial for the first few hours. Following this it is well to let the solution stand over night. The clear solution can then be poured off, taking the precaution to test the solution for values. The presence of values shows either too little zinc or too short a time of treatment and the addition of more zinc and further stirring will remove the remaining values.

There is great danger in the use of acid in precipitating, as the reaction throws off the most poisonous gas known. The use of liver of sulphur has the objection of producing a dirty slime. With zinc dust the precious metals are deposited on the zinc in metallic form and the residue is much more easily handled.

Zinc dust is preferable to the shavings as it mixes more readily with the solution, and since it has a greater surface per ounce than the shavings, the action is quicker.

The dust may be obtained from any supply house and is not expensive.

The residue should either be dried, or put in a keg with sawdust to take care of the excess wetness, and sent to Handy & Harman for refining.

Diamond and Pearl Weights

Table for Converting "Old" Carats and Grains into "New" Metric Equivalents

The "old" carat in general use throughout the United States weighs about 205.3 milligrams, while the new International metric carat weighs exactly 200 milligrams.

Example: Find the metric equivalent of $130\frac{19}{64}$ carats "old" weight. Using the tables on pages 39-40, we find:

Table No. 1	100 =	102.65
Table No. 1	30 =	30.80
Table No. 2	$\frac{19}{64}$ =	.30
		133.75 metric carats.

There is no such weight as a "Pearl" grain. Custom, however, sanctions the rule that four pearl grains is the equivalent of one carat; in other words, one quarter carat represents one grain; one-eighth of a carat represents one-half grain and so down to one sixty-fourth of a carat, which represents the smallest fraction of a grain, namely, one sixteenth. By using this table you will be able to convert the weights of mounted as well as unmounted gems and pearls from the "old" to the metric carats and grains.

Example: Find the metric equivalent of a lot of pearls weighing $127\frac{5}{16}$ grains "old" weight. Using the tables on pages 39-40 we find:

Table No. 1	100 =	102.65
Table No. 1	27 =	27.72
Table No. 3	$\frac{5}{16}$ =	.32
		130.69 metric grains.

Diamond and Pearl Weights

Table No. 1. Carats and Grains

Old Weight	New Metric Weight	Old Weight	New Metric Weight	Old Weight	New Metric Weight
1	1.03	38	39.01	75	76.99
2	2.05	39	40.03	76	78.01
3	3.08	40	41.06	77	79.04
4	4.11	41	42.09	78	80.07
5	5.13	42	43.11	79	81.09
6	6.16	43	44.14	80	82.12
7	7.19	44	45.17	81	83.15
8	8.21	45	46.19	82	84.17
9	9.24	46	47.22	83	85.20
10	10.27	47	49.25	84	86.23
11	11.29	48	49.27	85	87.25
12	12.32	49	50.30	86	88.28
13	13.34	50	51.33	87	89.31
14	14.37	51	52.35	88	90.33
15	15.40	52	53.38	89	91.36
16	16.42	53	54.40	90	92.39
17	17.45	54	55.43	91	93.41
18	18.48	55	56.46	92	94.44
19	19.50	56	57.48	93	95.46
20	20.53	57	58.51	94	96.49
21	21.56	58	59.54	95	97.52
22	22.58	59	60.56	96	98.54
23	23.61	60	61.59	97	99.57
24	24.64	61	62.62	98	100.60
25	25.66	62	63.64	99	101.62
26	26.69	63	64.67	100	102.65
27	27.72	64	65.70	200	205.30
28	28.74	65	66.72	300	307.95
29	29.77	66	67.75	400	410.60
30	30.80	67	68.78	500	513.25
31	31.82	68	69.80	600	615.90
32	32.85	69	70.83	700	718.55
33	33.87	70	71.86	800	821.20
34	34.90	71	72.88	900	923.85
35	35.93	72	73.91	1000	1026.50
36	36.95	73	74.93	2000	2053.00
37	37.98	74	75.96	5000	5132.50

Diamond and Pearl Weights

Table No. 2. Carats
Old 64ths with Metric Equivalents

Old Weight	New Metric Weight	Old Weight	New Metric Weight	Old Weight	New Metric Weight
1/64	.02	22/64	.35	43/64	.69
2/64	.03	23/64	.37	44/64	.71
3/64	.05	24/64	.38	45/64	.72
4/64	.06	25/64	.40	46/64	.74
5/64	.08	26/64	.42	47/64	.75
6/64	.10	27/64	.43	48/64	.77
7/64	.11	28/64	.45	49/64	.79
8/64	.13	29/64	.47	50/64	.80
9/64	.14	30/64	.48	51/64	.82
10/64	.16	31/64	.50	52/64	.83
11/64	.18	32/64	.51	53/64	.85
12/64	.19	33/64	.53	54/64	.87
13/64	.21	34/64	.55	55/64	.88
14/64	.22	35/64	.56	56/64	.90
15/64	.24	36/64	.58	57/64	.91
16/64	.26	37/64	.59	58/64	.93
17/64	.27	38/64	.61	59/64	.95
18/64	.29	39/64	.63	60/64	.96
19/64	.30	40/64	.64	61/64	.98
20/64	.32	41/64	.66	62/64	.99
21/64	.34	42/64	.67	63/64	1.01

Table No. 3. Grains
Old 16ths with Metric Equivalents

Old Weight	New Metric Weight	Old Weight	New Metric Weight	Old Weight	New Metric Weight
1/16	.06	6/16	.38	11/16	.71
2/16	.13	7/16	.45	12/16	.77
3/16	.19	8/16	.51	13/16	.83
4/16	.26	9/16	.58	14/16	.90
5/16	.32	10/16	.64	15/16	.96

Reputation

A concern of reputation has something more at stake than the amount involved in your own personal dealings with it.

When a firm does a successful and growing business year after year for 50 years you know it is earning the confidence of its patrons in its service and products and that it must be living up to its reputation.

Handy & Harman have been established since 1865 and are recognized as the largest concern in their line of industry in the United States.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